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ABSTRACT

Today there is a swelling trend toward a greater awareness of the significance of developing wholesome self-concepts related to reading competency; a concern for controlling nutrition to increase intelligence and reading ability; a promise of using drugs and electronic means to improve intelligence, to manipulate human behavior, and modify personality; and a rapid development in the technological trends related to reading instruction and diagnosis, such as the teaching machines and the computer. However, we always need perceptive teachers to encourage, guide, and stimulate the higher intellectual processes in reading. To prepare the child for the rapidly changing world, we must teach the child adaptability. The beginning trends toward adaptability in reading are indicated in the increasing tendency toward individualized progression, the concern for the disadvantaged, and the informally organized classroom. There is no better medium for teachers to develop adaptability in children than reading in the subject content areas. In order to develop such ability, teachers today must use this content in teaching reading in ways that will encourage children to read interpretively and to think critically and creatively. References are included. (AW)

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Sessions 10:45-11:45 a.m., April 22
Trends in Reading Instruction

THE QUEST FOR INCREASED READING COMPETENCY

Introduction

The quest for reading competency in America began with the famous law of 1647 which reads in part:

> "...that learning may not be buried in the graves of our fathers in church and commonwealth, the Lord assisting our endeavors - it is therefore ordered that every township in this jurisdiction, after the Lord hath increased them to fifty householders, shall then forthwith appoint one within their town to teach all such children as shall resort to him to read and write." (3)

Even though they had no organized schools, no trained teachers, no instructional materials except the ABC and the Bible these people in early Massachusetts were seeking reading competency for those within their jurisdiction.

This beginning was but a tiny thread in a great cable of developments in reading instruction that followed through the years

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ahead - a cable intertwined with innumberable philosophies, methods and materials; a cable whose strands alternately have been accepted, discarded, praised and blamed; a cable which has ever been changing and growing in magnitude, a cable which always has been the object of search for higher levels of strength and adequacy.

The quest for reading competency during the past three and a quarter centuries of American life is a fascinating story to pursue. I wish I had time to discuss the past but trends with which we should be concerned in preparing children for the twenty-first century are much too urgent to be neglected. So this talk will be concerned with the present and the future in which we must continue with increasing effort this earnest quest for reading competency.

Increased Attention to Self-Concept

The increasing emphasis on self-concept as a factor influencing a child's learning in school is a matter of significance to us who are concerned with reading instruction.

Dewey advocated interest as the key to effort in learning, Kilpatrick used the term "purposeful activity" as the fundamental learning concept, Thorndike thought "readiness" was the self-starter, and other psychologists have used such terms as desire, incentive, inner drive, and so on. Recently, however, attention has centered on self-concept as the spring-board which touches off all of these other desirable learning attributes. Several studies (8) have shown that there is a positive relationship between feelings of self worth

and school achievement.

Applied to reading specifically, if a child is failing in reading he may develop a low concept of himself in that subject which hinders his future success in learning to read. Further, this low concept may in turn spread to the reading materials, the teacher, other subjects, the whole school, with disastrous final results.

Research is revealing that teachers often unwittingly, tend to lower self-concepts in general rather than enhancing them.

Eleanor Leacock (9) reported a study resulting from classroom observations in New York City Schools. So far as the observers could tell the teachers were free from racial prejudice; some of them were themselves black. According to the data gathered both the black and white teachers who taught in the low-income black schools expected low achievement of their pupils and expressed this expectation in many ways in their dealings with the children every day, "subtle ways which served to teach lower class children not to learn."

The child from the disadvantaged home usually comes to school in the first place set not to learn and he thinks he can't learn. His first learning task is associated with reading. He doesn't do well. His self-concept in reading is lowered at the beginning. If his teachers think "He's disadvantaged. What can you expect?" His self-concept grows lower and lower. As he passes through the grades eventually he may drop out of school mainly because he couldn't read well enough to do his school work.

On the other hand a deficient reader may come from a well-to-do, cultured home. All schools in the best neighborhoods have their deficient readers. Perhaps when a student in one of these schools has trouble with reading he begins to think that it may be because he is dumb, and often the teacher's irritation with him contributes to lowering his self-concept. Under these conditions he becomes increasingly discouraged and decides it isn't worth while trying.

Preston (11) made a study in which she drew the conclusion that 78 per cent of the teachers were irritated, annoyed, vexed with poor readers and showed their feeling about them in many direct and obvious ways. Surely this is not helping such children to improve the self-concept of their reading ability which is needed most of all in overcoming their problems.

There are many wonderful teachers of course who do hold good expectations for their pupils achievement and who do help them when they are failing rather than scolding them or showing annoyance with them, but recent research indicates that many teachers are unconsciously militating against the building of better self-concepts instead of contributing to their development.

The swelling trend toward a greater awareness of the significance of developing wholesome self-concepts toward reading achievement is certainly a satisfying one and I trust that it may contribute much to reading improvement in the future.

Concerns for the Undernourished As They May Affect Reading

One of our world-wide concerns thrown into bold relief with this emerging epoch is a new solicitude for poverty people - poor people living in city slums, in the developing countries, in over-populated or barren sections of our own and other nations. As one facet of this concern, hunger has been investigated, including the malnutrition of children. Resultingly, some facts have been revealed which are significant to us in the teaching of reading.

Numerous studies (18) have shown a relationship between nutrition and intelligence, and all would agree that intelligence and reading have a high correlation. Many studies (2) have shown that inadequate nourishment of the mother during pregnancy is a factor affecting the child's intelligence.

Scarr (12) sums up the results of these studies when she says, "From the day a poor child is conceived by his poorly nourished mother, he is probably unequal. His growth is likely to be slower; he is more likely to be assaulted by infections and prenatal complications, and he is all too likely to be born in a premature state, which exposes him to enormous risks of brain damage."

As for young children after birth, protein it seems is especially important to the development of their brains during their early years. Because protein foods are expensive the poor have lower protein diets than advisable for their optimal growth. Several recent studies (2) made in Mexico, Guatemala and the United States show that there is a correlation between low protein intake and

intellectual development and general dullness in the learning capacity of young children.

No doubt if all of the children in the United States and their mothers had all of the food that they need including an adequate supply of protein and other dietary essentials, our problem cases in teaching reading would be decreased tremendously.

The national provision to supply lunches free or at a reduced cost was a good step forward. The advice which is being given to mothers in the rapidly increasing nursery schools is helpful. In addition anything that you can do to get your club, church, city or state to do more about improving nutrition for those who need improvement will be effort well placed, and all the time you will be directly improving reading instruction.

In the future it is quite possible that nutrition will be rigidly controlled in order to produce intelligent human beings and human beings who are physically fit in so far as nutrition may contribute to these goals.

Possibilities in the Use of Drugs to Increase Reading Ability

Experiments in the use of drugs to increase reading ability with remedial cases were used by Smith and Carrigan (14) and by Staiger (15) in 1959 and 1960, and were found to be ineffective in improving reading skills.

Recently experiments have been conducted with animals in the use of drugs to increase learning and memory. These appear to be promising and may have some significance for us in reading.

Nicholas Plotinkoff, of Abbott Laboratories in Chicago, has tested a drug named cylert on rats and discovered that it increased their learning capacity up to five times that of untreated rats and this learning was permanent. James McGaugh, at the University of California at Irvine, has experimented in giving memory-enhancing drugs to rats. He found that a treated rat remembered getting out of a maze better than an untreated rat. Several other studies of this type have been conducted.

Other investigators have attempted to transfer learning by injecting fluid or material from the brains of trained animals into the brains of untrained ones. The results are successful with simple multi-cellular animals and mice, but scientists are not yet clear about the effect on transfers on higher forms of life.

However, the possibilities of using drugs to increase intelligence, learning ability and memory, seem to have moved from the realm of the possible to the probable in the not too distant future. It is even predicted that the brain can be electronically linked o computers to increase the application of human intellect to problem solving, and to lead more or less directly to the improvement of human analytical ability.

In the light of fast moving developments, drugs and electronic means do seem to have promise of offering valuable help to normal learners, as well as to slow learners and the mentally retarded. In the future these drugs might be of assistance to certain students in each of these classifications, who are having difficulty in learning to read.

Dr. Krech (7) of the University of California at Los Angeles half-jokingly says: "Both the biochemist and the teacher of the future will combine their skills and insights for the educational and intellectual development of the child. Tommy needs a bit more of an immediate memory stimulator; Jack could do with a chemical attention-span stretcher; Rachel needs an antichlorine-esterase to slow down her mental processes; Joan, some puromycin--she remembers too many details, and gets lost."

As for the challenge of the new drugs I will again quote from Dr. Krech (7):

"To be sure, all our data thus far has come from the brains of rodents. But is anyone so certain that the chemistry of the brain of a rat (which, after all, is a fairly complex mammal) is so different from that of a brain of a human being, that he dare neglect this challenge--or even gamble--when the stakes are so high?"

The very latest development in drugs which might be useful in the teaching of reading has to do with those that influence behavior.

At the NEA Convention last summer Sally R. Williams (13) of the California School Nurses Organization made a plea for the use of such drugs under carefully observed safeguards, and was strongly defended by the NEA's Department of School Nurses. She said about two per cent of the children who were unable to achieve acceptably in reading, spelling and mathematics, and who had normal or above normal intelligence could be characterized as hyperactic, having a

very short attention span, being excessively distractible and having no impulse control. She stated that literature is filled with documented case studies showing that such pupils carefully identified by psychological and medical evaluation have been significantly helped by amphetamines and Ritalin.

Some schools are now experimenting with behavior modification drugs. As many as ten per cent of the children in one midwestern city are taking such drugs. The whole matter, however, is controversial. The research that has been conducted at present is sparse, lacking in controls and quite unsettled.

As for the use of drugs with deficient readers, such treatment may be useful in some instances for we all know that many remedial reading cases are also behavior cases. Their behavior, however, may be due sometimes to lack of interest in the material, absence of stimulating atmosphere, failure of the teacher to adjust to the pupils particular level, etc., rather than to innate psychological factors. So very careful diagnosis definitely is needed, involving a physician, psychologist, often a psychiatrist as well as the reading specialist before a decision is made in regard to the use of drugs.

However, the future holds great promise for manipulating human behavior and also modifying personality. In the not too distant future techniques are likely to be developed to control perception, alterness, fatigue, tension, relaxation, shyness, aggressiveness, etc., as well as to increase intelligence and learning capacity. The use of such techniques in needed areas should be valuable to certain individuals in reading and in life, itself.

Technological Trends Related to Reading

In the long trek of our quest for reading improvement by far the most revolutionary innovation is the use of electronic technology and its future possibilities.

Non-electronic automated machines for use in reading instruction entered the scene in the 1920's with the introduction of the metronoscope, tachistoscope, accelerator; then followed all of their descendants in a great variety of forms and nomenclature. I haven't time to discuss the non-electronic automated machines in this talk, so will proceed with the electronic devices.

Eventually there was some experimentation in teaching reading with TV, but enthusiasm for using TV as a media for reading instruction died down somewhat till Sesame Street had its spectacular run in the fall of 1969 with excellent results in teaching some of the fundamentals of reading to preschool children. Mrs. Joan Cooney and Associates of Children's Television Workshop are now preparing a program for seven-and-eight-year-olds. These projects, no doubt, will stimulate many more programs to teach reading with the use of TV both in and outside of schools.

At this time the market is providing many automated reading and language arts laboratories for classrooms, and a multitude of audiovisual devices and games which a child can use by himself in obtaining practice on many different aspects of reading.

The larger technological developments, however, which are emerging into the reading field are the talking-typewriter, the teaching machine and the computer.

The talking-typewriter is being used experimentally in some nursery schools and with some remedial reading students.

Reports from nursery schools using the typewriter indicate that children learn to recognize the letters and their sounds and in some cases they can type out short stories dictated to them. Teachers report substantial gains in remedial classes, also.

I will mention the electronic teaching machine next. The most of the present electronic teaching machines look like a television screen in an open-face box with accompanying equipment consisting of an audiovisual system conveyed by the screen and a speaker. Some have ear phones and a typewriter.

Materials used in the machines vary. Some companies prepare their own materials, some use commercial materials, some use a combination of their own materials and commercial materials.

The students use the materials and make their responses according to audio or visual instructions given them by the machine.

Now a word about the computer, the wizard of all technological devices. The computer it seems is the most favored of the automated inventions for instruction and diagnosis in reading. In East Palo Alto it is being used to teach reading to a group of first graders.

There are sixteen terminals from the one computer which serve each of sixteen children. Each child works at the end of his particular terminal. While all children work simultaneously, each one may be working on different material and progressing at his own rate.

The work at the Stanford Laboratory as reported by Atkinson (1) and Suppes (16) indicate that computer assisted instruction in reading resulted in significant differences over experimental controls in all subskills except comprehension, where no significant differences were obtained.

The report above had to do with the use of the computer in teaching reading. Many people think that the most useful function which the computer can contribute to reading in the future, may be in the area of diagnosis. I will give you an example now in which a computer has been used for diagnostic purposes.

Geddes and Kooi (5) report an experiment conducted in two schools in Los Angeles using an Instructional Management System in which a computer played a very large role in its service as a diagnostic instrument.

Children were given tests that resemble in format the usual workbook type of practice exercise. These were given once or twice a week, with directions prepared on audio tape and presented through headsets to a group of children at a listening center in the classroom. Each test item was carefully keyed to a teaching objective, to permit the generation of a diagnostic printout for the teacher. The test items were printed on machine-readable forms. When the children had filled out their test sheets, the sheets were collected and the test data were inserted into a computer by means of an optical scanner. These data were analyzed by a series of programs that associated student response data with instructional objectives, and designated appropriate prescriptive information, recorded individual and group performance, and generated a printout that was

placed in the teacher's school mailbox the next morning.

The printout described who was having what kind of learning difficulty, suggested alternative activities, and referred the teacher to supplementary instructional materials that were stored in a file in her classroom. If the teacher wanted additional diagnostic information or information about available materials, she could use the teletype terminal in the school to make additional queries of the computer.

This whole system you see was set up in terms of computer possibilities of helping the particular teacher with her own group of pupils in her day by day classroom instruction.

I hope these two examples have illustrated some of the present possibilities of the use of computers in reading instruction and in diagnosis. The computer is also proving to be very valuable in processing and retrieving data in the areas of reading research and information.

As for the future of the computer, generally speaking, its possibilities are very great. It can make the whole world of information, computation, audio-visual materials available to us; it can place before the teachers and students entire libraries of print and nonprint materials for their use at any time that they desire.

In so far as reading, specifically, is concerned the computer will probably become increasingly useful in all of the areas in which it is operating at present. However, there is one very great improvement yet to be made.

So far computer instruction in reading has consisted pretty much of drill on mechanics and checking literal comprehension. In the future our great emphasis should be on interpretation, critical and creative reading. The computer is said to have great potentialities in the higher intellectual processes but its student-subject matter interface methods are limited to a few visual and auditory techniques such as light pen, slides, films, typewriter, compiled speech, etc. Considerable work remains to be done in the speech generation, that is the conversation, area. When such work is done we can expect more depth reading in computer instruction. However, I don't think a computer, can every fully anticipate children's answers in critical and creative reading. In my opinion we'll always need perceptive teachers to encourage, guide and stimulate the use of the higher intellectual processes in reading through group discussion and interaction with human beings.

The Need for Developing Adaptability to Change

The speed with which change is taking place means that the child who is in school today and who will be spending most of his life in the twenty-first century, will be living in a world far different from our present world. The facts that we are teaching him now will be of no, or at best of little use to him in the future. What we can do for him, the big contribution that we can make to the child of the future, is to teach him adaptability - ability to use his thinking powers in sensing the many possibilities of a situation: problems involved, tentative solutions, evaluations, choices

to be made. In other words we should be teaching children to think in ways that will enable them to adapt themselves to the ever accelerating change which is bound to come all through their lives.

Alvin Toffler (17) in his excellent book titled Future Shock traces progress statistically through the years in transportation, agriculture, economic growth, population, consumption of energy, machines, publication of books and many other aspects of civilization. In all cases he reveals slow, gradual increases since primitive days with a dramatic leap in the last generation and startling change in the last ten years. We have been living in an industrial civilization during the last generation. We are merging into a technological or super-industrial civilization in which the children of today will be living their lives. This super-industrial civilization has every promise of being characterized by even greater acceleration in change than that which has taken place during the past ten years.

What does this have to do with reading?

In our industrial society the schools were modeled in terms of industry. Quoting Toffler (17):

> ". . . the whole idea of assembling masses of students (raw material) to be processed by teachers (workers) in a centrally located school (factory) was a stroke of industrial genius. . . . Children marched from place to place and sat in assigned stations. Bells rang to announce changes in time.

"Young people passing through this educational machine emerged into an adult society whose structure of jobs, roles and institutions resembled that of the school itself."

We still have many schools of this type and the young people passing through them won't have jobs that mirror the introduction to society that these schools are giving them.

I will mention a couple of reflections of this kind of school as still seen here and there in reading instruction, and which surely are not contributing to the development of adaptability.

For example, we still have some schools in which all children are supposed to cover a reader or some other form of basal material at a certain grade level each semester or year in the first six years in the grades regardless of individual differences in intelligence, socio-economic background, interest, emotional factors, etc. (This is not to be construed as a criticism of basal materials but rather of the requirements made of individual children.)

Another mass production process which is still altogether too prevalent is that in which the teacher follows students' reading of text daily with memory-information questions. In visiting classrooms Guszak (6) found that literal questions were most frequently asked by teachers on reading across grade levels. Floyd (4) found that only five per cent of ten teachers' questions on reading demanded a thought answer. Pate and Bremer (10) found only ten per cent of the teachers even believed that teacher questions should deal with generalizations and inferences. Mass production of factual answers seems to be the output still desired by many teachers

at present.

We must somehow get all teachers of reading to realize that a tremendous responsibility rests with us to teach children to interpret what they read, to think critically and creatively.

Leaving the matter of asking questions on reading content, it is good to note that there was some very hopeful indications of beginning trends towards adaptability in the reading area. For one thing we are tending to move more and more from mass progression toward individualized pregression in reading. In the early sixties we heard much about individualized instruction in reading but the use of this plan was spotty, and more often than not confined to one or two grades rather than extended to the reorganization of a whole school.

At present we are hearing about extensive plans of individualization which include reading along with other subjects and involving a cluster of grades or a whole school. IPI, Plan Project, Individually Guided Instruction developed in Wisconsin - each of these involve individualization in several grades and each is being used in a large number of schools. These may be harbingers of other similar developments to come which, together with the help of more electronic devices, will provide adaptations to individual progression in the future far beyond anything known in the past.

Then there is a quantity of excellent research which is being conducted concerning the teaching of reading to the disadvantaged. This is promising.

Another trend in reading which has possibilities for learning adaptability is the informally organized classroom in which children learn through using several multimedia materials, different ones doing different things with tape recorders, film strips, projectors, TV, automated games, as well as with books and other soft ware materials.

I have mentioned on a few of the signs of the times which indicate that there are already in existence the beginnings of trends toward teaching reading in ways that will educate the child in adaptability -- the quality he will need most in living in the unforseen future.

There are some who are predicting possibilities far beyond any of those I have mentioned.

Toffler (17), for example, suggests that for the super-industrial future we have a "contingency curriculum" aimed at handling problems that do not exist now and which, in fact, may never materialize. He says we need to cope with potentially calamitous, though perhaps unlikely, contingencies: such as back contamination of the earth from the planets and stars, or the need to communicate with extra-terrestial life. Even though such things as these may never happen, the students will have had an experience in adaptability.

He says, "Even now we should be training cadres of young people for life in submarine communities. Part of the next generation may well find itself living under the oceans." (17) He thinks we should be doing this not only with graduate students but with children drawn from the elementary schools and even with nursery school

children.

Studies such as these keyed to future developments and problems would call for a tremendous amount of reading in many different areas and a kind of reading that most surely could contribute more to student adaptability than asking fact questions on a story in a reading class.

If students are to adapt to our present changing society, and to our increasingly accelerated future they must know how to adjust their thinking to different situations, how to evaluate changing conditions, how to solve problems. And what better medium can serve our needs as teachers in developing these abilities than the content of reading - the content of reading which is as rich as all the resources in the world.

We must use this content in teaching reading in ways that will encourage children to speculate, ponder, search, solve, create to the very depths of their minds in attempts to find answers - for that is what they will have to do to survive the accelerating thrust of the twenty-first century.

In the face of unprecedented change you as teachers will often find it necessary to make wise and discriminating decisions related to reading; you will need to judge values carefully; you will need to light candles; you will need to blaze trails! My best wishes are with you as you continue to prepare children for reading competency in the unpredictable years ahead.

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